

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The final Office Action of December 29, 2004 has been received and contents carefully reviewed.

Claims 41-56 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

In the Office Action, the Examiner rejected claims 41-56 under 35 U.S.C. § 103(a) as being unpatentable over Yamaguchi et al. (U.S. Patent No. 5,897,346) and in view of Aomori et al. (U.S. Patent No. 5,504,020). Applicant respectfully traverses these rejections.

Claim 41 is allowable over the cited references in that claim 41 recites a combination of elements including, for example, “forming an impurity region by implanting impurity ions to said excited region in a heavy dosage while the excited region remains in an excited state and has a temperature high enough to self-activate the impurity ions, whereby the implanted impurity ions become self-activated.” None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention.

In the Office Action on page 3, the Examiner states, “[h]owever, Aomori, a patent from the same filed of endeavor, describes in col. 3 lines 13-25 ion shower doping method wherein heavy doping/implantation of Hydrogen ions the impurity ions are self-activated in the polycrystalline thin film to fabricate TFTS...”

As stated by the Examiner, Aomori et al. in Col. 3, lines 13-25, discloses an ion shower doping method. However, Aomori et al. in Col. 2, lines 34- 46, further discloses, “[w]hen the ions are to be implanted over a large substrate... the ion implantation apparatus becomes complicated, large-sized and expensive. One technique for solving the above problem and in which ions can be easily implanted into a large area is an ion shower doping method.” Accordingly, Applicant respectfully submits that the teachings of Aomori et al. actually teaches away from the teachings of Yamaguchi et al. and/or the present application, both of which relate to an ion implantation method, not an ion shower doping method, to fabricate a thin film transistor on a glass substrate. Thus, there is no motivation for one of ordinary skill to combine Yamaguchi et al. and Aomori et al. and arrive at the claimed invention with any reasonable

expectation of success.

In addition, Aomori et al. in Col. 3, lines 13-25, as best understood, discloses, an ion shower doping method in which the hydrogen and impurity ions are implanted at the same time during the shower doping process. In contrast, according to claim 41, impurity ions are implanted to a portion of the active layer *after* the portion of the active layer is implanted with hydrogen ions, because claim 41 recites “forming an impurity region by implanting impurity ions to said excited region... while the excited region remains in an excited state...” Accordingly, Applicant respectfully submits that claim 41 and claims 42-54, which depend therefrom, are allowable over the cited references.

Claim 55 is allowable over the cited references in that claim 55 recites a combination of elements including, for example, “forming an impurity region by implanting impurity ions to said excited region while the excited region remains in an excited state and has a temperature high enough to self-activate the impurity ions, wherein the activation of said impurity ions implanted occurs as the step of said implanting impurity ions is performed.” None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention. Accordingly, Applicants respectfully submit that claim 55 and claim 56, which depends therefrom, are allowable over the cited references.

Applicant believes the foregoing remarks place the application in condition for allowance and early, favorable action is respectfully solicited. If the Examiner deems that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at the telephone number (202) 496-7500. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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